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DESCRIPTION OF *MICROCERBERUS KIIENSIS*, N. SP.: PRIMARY RECORD OF THE SUBORDER MICROCERBERIDEA (CRUSTACEA, ISOPODA) IN JAPAN[1)]

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With Text-figures 1–3

During an observation on the interstitial animals collected from a beach at Senrihama near Minabe, Middle Kii, several specimens of a very small elongate isopod were found together with other interstitial animals. Afterwards some additional specimens of the same form were collected from the beach of Iwashiro not so far from the previous locality and also the beach north of the Seto Marine Biological Laboratory. Closer examinations on these specimens have revealed that they represent a new species of the suborder Microcerberidea Lang which has yet been recorded neither in Japan nor in the entire western Pacific.

So far as the present author is aware, twenty species of this suborder have been described from all over the world, but mainly from the Mediterranean Sea. Most of them have been discovered in the interstitial environment of marine sandy beaches, though some have been found in land caves or in the sandy bottom bordering fresh water streams. The present record of a new species in Japan evidently supports the idea of a world-wide distribution of the suborder. The present new species is seemingly limited to the open coast or the bay mouth exposed to heavy surf and to the lower intertidal to subtidal zones of coarse sandy substratum. Laboratory observations showed that the animals could move around rather rapidly in the petridish using their long antennae and walking legs.

The animals were collected together with sand by a bucket and then sorted in the following method: one liter of sand of the gross sample was put into another bucket filled with six liters of fresh sea water, fully stirred, and the animals in the water was filtered by a plankton net streched with the gause of 200 μ meshes. This treatment was repeated three times on respective one liter sand samples; in this way seemingly more than 90% of small isopods were extracted. The specimens were preserved in 70% ethyl alcohol and examined in glycerol. As it was beyond the ability of the author to dissect the mouth parts of the present new species, so the parts were observed *in situ* by

1) Contributions from the Seto Marine Biological Laboratory, No. 579.

phase contrast microscope. All the figures were drawn by using camera lucida.

Before going further, the author would like to express his sincere gratitude to Dr. T. Tokioka and Dr. S. Nishimura of the Seto Marine Biological Laboratory for many useful suggestions and information of some references, to Mr. R. Yamanishi for his kindness in collecting the first specimens, and to the other staff and graduate students at the laboratory for their advices, criticisms and cordial help for the present study.

Microcerberus kiiensis, n. sp.

(Japanese name: Kii-sunachibimushi)

(Text-figures 1–3)

Material examined: 1) 2♂ (0.69–0.72 mm in body length) and 1♀ (0.63 mm in body length), Senrihama near Minabe, Kii Peninsula, Japan, coll. R. Yamanishi, Nov. 1, 1971. 2) 1♀ (0.70 mm in body length), Senrihama near Minabe, Kii Peninsula, Japan, coll. N. Nunomura, Jan. 16, 1972. 3) 1♂ (0.80 mm in body length) and 1♀ (0.78 mm in body length), Iwashiro, Kii Peninsula, Japan, coll. N.

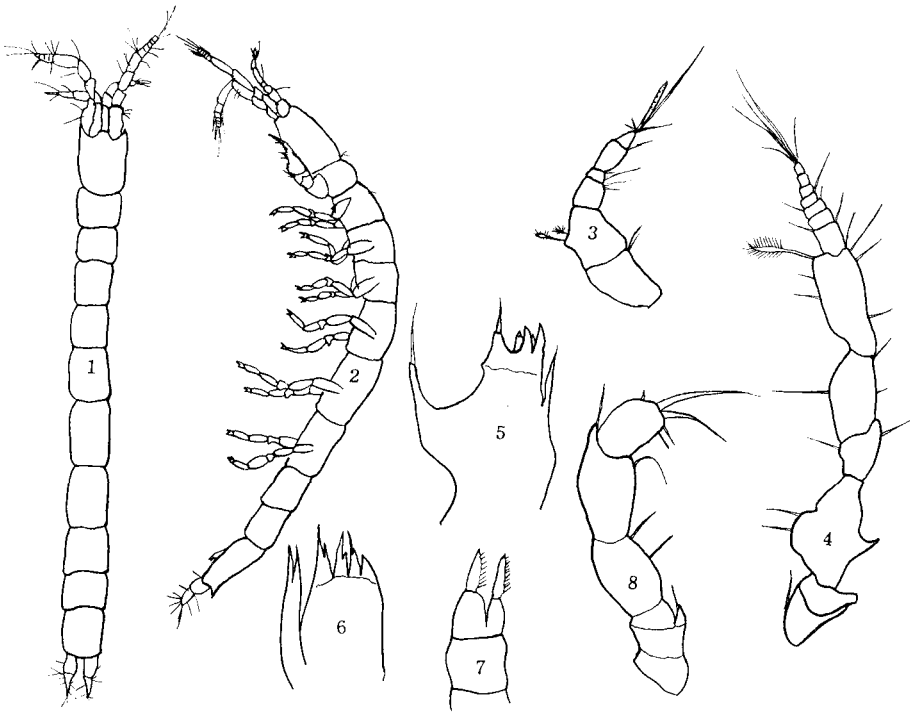

Fig. 1. *Microcerberus kiiensis*, n. sp.
1. Dorsal view, ×66. 2. Lateral view, ×66. 3. Antennula, ×400.
4. Antenna, ×400. 5. Mandible, ×1150. 6. Maxillula, ×1150.
7. Maxilla, ×1150. 8. Maxilliped, ×1000.
(1–2. Mature female, 3–8. Mature male, holotype)

Nunomura, Mar. 14, 1972. 4) 2♂ (1♂, holotype, 1.27mm in body length, and a paratype, 0.88mm in body length) and 27♀ (0.74mm–1.15mm in body length, 1 allotype and 26 paratypes), Seto, Kii Peninsula, Japan, coll. N. Nunomura, May 5, 1972; types are deposited at the museum of the Seto Marine Biological Laboratory (SMBL-Type 246). 5) 1♂ (0.90 mm in body length) and 4♀ (0.90mm–0.99mm in body length), Seto, Kii Peninsula, Japan, coll. N. Nunomura, May 6, 1972. 6) 4♀ (0.82mm–0.95mm in body length), Seto, Kii Peninsula, Japan, coll. N. Nunomura, May 21, 1972. No manca stage was found.

Description: Both sexes colourless and transparent. Body elongated, almost cylindrical (Fig. 1, 1–2). The largest male 1.27 mm long from the anterior margin of cephalon to the posterior margin of pleotelson and 0.12 mm in the greatest width, the largest female 1.07 mm long and 0.10 mm in the greatest width. Eyes absent.

Antennula six-segmented (Fig. 1, 3). First segment with only simple seta. Second segment with two sensory plumose setae at the middle on the outer margin. Third, fourth and fifth segments each with only one or two simple setae. Sixth segment with a spatulate seta and four simple setae at the tip.

Antenna longer than antennula, with six segments in peduncle (Fig. 1, 4). First segment almost triangular in outline and with a simple seta. Second segment small and without setae. Third segment much longer, stout and with two simple setae. Fourth segment almost triangular and with simple setae. Fifth segment somewhat longer and with three simple setae. Sixth segment with a long spatulated plumose seta at the outer distal corner in addition to several simple setae. The antennal flagellum consists of seven small segments with several short setae alongside and five long ones at the tip.

Mandible (Fig. 1, 5) with long palpus, sharp pars incisiva and lacina mobilis and slender processus molaris.

Maxillula (Fig. 1, 6) consists of two lobes; the inner ones slender and with two spines, the outer with about four denticles.

Maxilla (Fig. 1, 7) two segmented and furnished with two hairy lobes at the tip.

Maxilliped (Fig. 1, 8) six-segmented. A sharp projection with a simple seta at the base of third segment. Terminal segment with two stout distal spines and three subterminal setae.

Peraeopod I (Fig. 2, 1) subchelate. Propodus very big and equipped with five finely-serrated spines on the inner margin, three distal ones shorter and with seven to eight denticles, while the two proximal ones longer and with thirteen to fourteen denticles. Dactylus with a row of dense hairs and two stout spines on the inner margin and with a long claw at the tip, the spines (Fig. 2, 8) are each cut into three sharp denticles on the inner margin.

Peraeopods II-VII (Fig. 2, 2–7) are all normal walking legs, dactylus with two terminal claws. Legs are directed backward in peraeropods II-IV, but forward in peraeopods V-VII. Most legs with plumose setae on the inner projection of basis and some legs with a plumose seta also at the distal corner of carpus. Number and site of

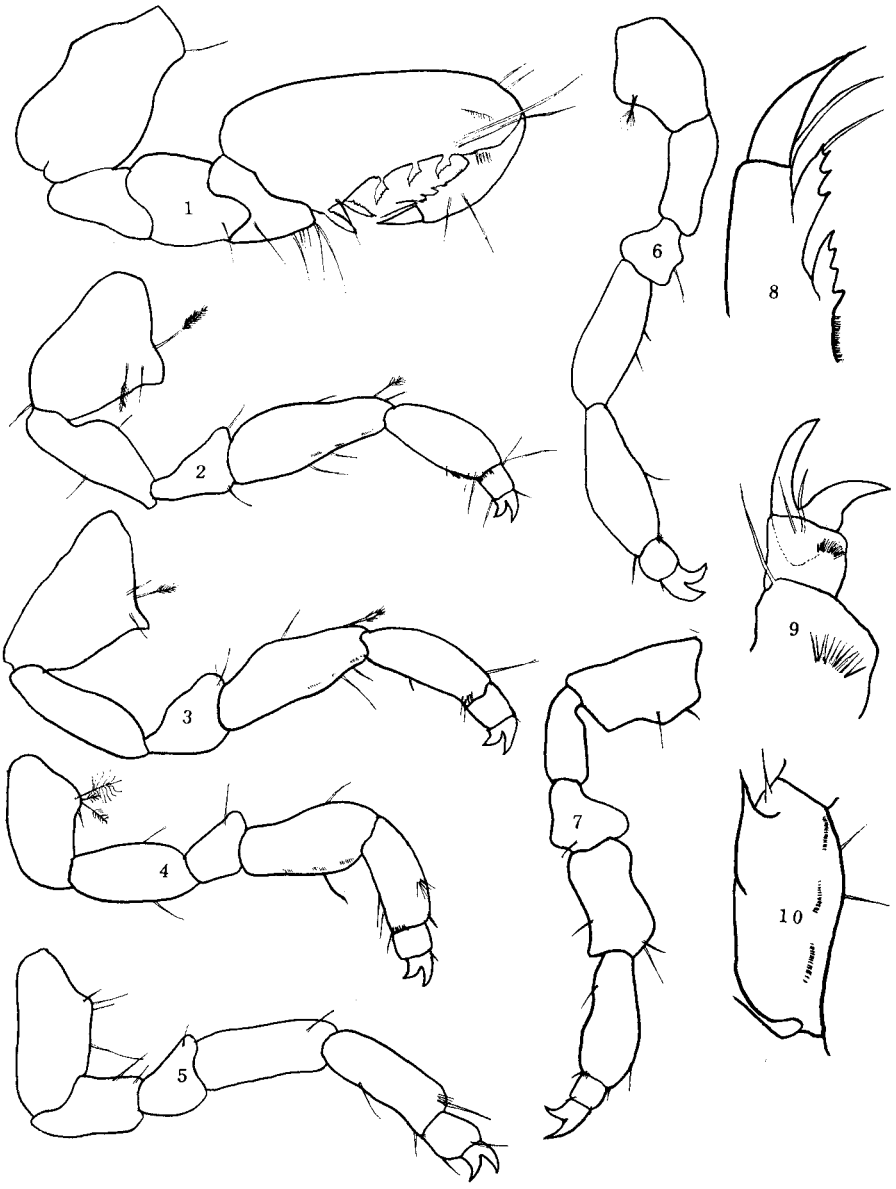

Fig. 2. *Microcerberus kiiensis,* n. sp.
1–7. Peraeopods I-VII, ×400.
8. Dactylus of peraeopod I, ×1150.
9. Dactylus of paraeopod III, ×1150.
10. Carpus of peraeopod III, ×1000.
(all of the holotype)

some setae variable among specimens. Some specimens with a projection in stead of setae on the innerside of carpus of third peraeopod (Fig. 2, 10). Some specimens may have a group of spines on dactylopod of second and third peraeopods (Fig. 2, 9).

Male second pleopod is very characteristic in shape (Fig. 3). It consists of much smaller exopodite with a single apical seta and much larger endopodite with a long apical spine whose tip is knife-edged and with a hollow. The inner side of endopodite furnished with more than thirty projections consisting each of numerous spines.

Basis of uropod with dense hairs and three setae on the inner side and with a single seta at the middle on the outer side, exopodite very small and with two long setae, endopodite slightly curved inward and with five long setae at the tip and a plumose seta on the inner margin near the tip.

Remarks: The present new species resembles most closely *Microcerberus abotti* Lang and its subspecies *Microcerberus abotti juani* Coineau and Delamare Deboutteville

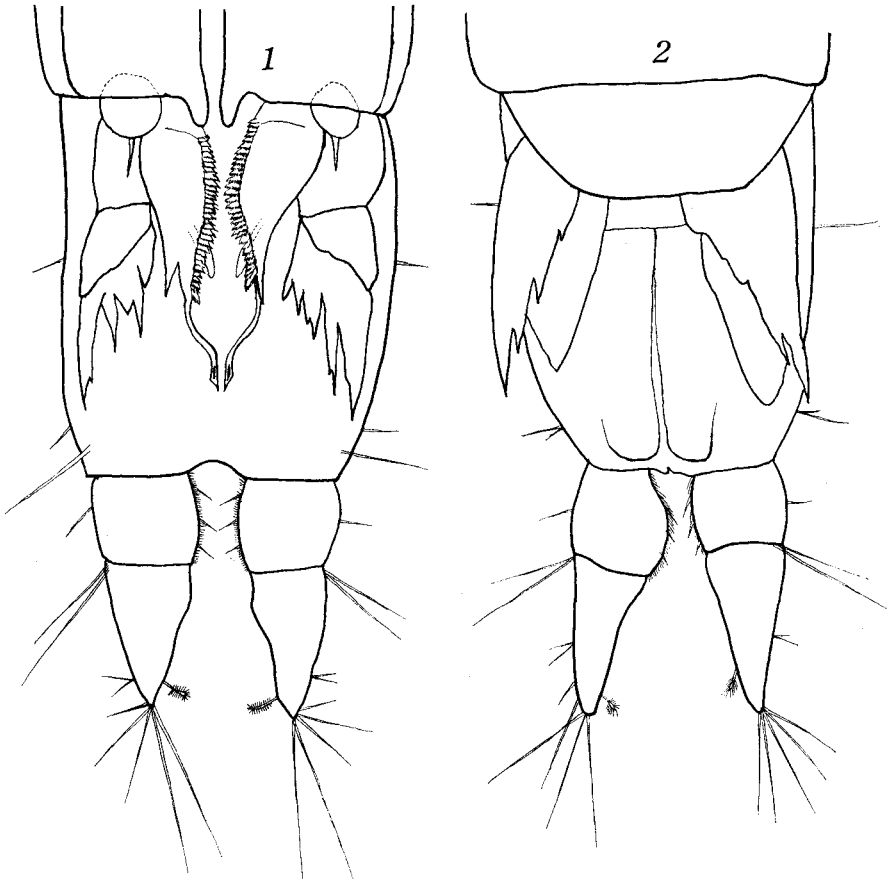

Fig. 3. *Microcerberus kiiensis*, n. sp.
1. Pleotelson and uropods of male, ×460. 2. Pleotelson and uropods of female, ×460.

from California, the east side of the North Pacific. The morphology of the endopodite of the second pleopod in male has been the most characteristic feature of the genus *Microcerberus* and it is obvious that the above-mentioned morphology in males from Japan is very similar to that in *M. abotti* Lang. The present new species differs, however, from *abotti* Lang and its subspecies in the following points: (1) in the new species the tip of the male second pleopod looks like a knife edge, but in the two eastern Pacific forms mentioned above it looks like a spear head; (2) in the former the inner margin of the endopodite of the second pleopod is furnished with more than thirty elongated triangular projections, while in the latter the armature on the margin is structured differently in shape and defined only vaguely, numbering 18–24 as seen in the original figures given by Lang and Coineau et Delamare Deboutteville.

ZUSAMMENFASSUNG

Ein neuer interstitieller Isopode *Microcerberus kiiensis* n. sp. wurde an der Küste von Kii-Halbinsel, Zentlal Japan, als der erste Vertreter der Gattung aus Japan und West-Pazifik gefunden. Der neue Isopode ist *Microcerberus abotti* Lang ähnlich, aber dieser kann von jenem durch die Gestalt von der Spitze der zweiten Pleopoden, das wichtigste Merkmal für die Gattung, getrennt werden.

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